

REMARKS

Claims 1-14, 18, 20, 22-26, 28, 30-35 and 39-42 are pending in this application. By this Amendment, claims 2, 12, 13, 18, 20, 26, 28, 30, 31, 33, 39, 40 and 42 are amended and claims 15-17, 19, 21, 27, 29, 36-38, 43 and 44 are canceled. Support for the amendments can be found in the canceled claims. No new matter is added. Applicants respectfully request reconsideration and prompt allowance for at least the following remarks.

The Office Action rejects claims 2, 17-20, 33, 37, 40 and 42 under 35 U.S.C. §112 ¶2 alleging the terms "such that" and "relatively" render the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. The rejection to claims 17, 19 and 37 is moot in view of their cancellation. Applicants amend claim 40 by deleting the term "relatively" and amend claims 2, 18, 20, 33 and 42 by replacing the term "such that" with the term "so that." Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 1-44 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,107,910 (Nysen) in view of U.S. Patent No. 6,362,737 (Rodgers) and U.S. Patent No. 5,940,006 (MacLellan). Applicants respectfully traverse the rejection.

Regarding claim 1, Applicants assert that the references do not disclose or suggest an endpoint device including "a distance detecting portion operable to detect a distance between said interrogator and said endpoint device."

Rather, Nysen discloses a system that utilizes the drop in transmitted signal strength of a tag to prevent the receiver/detector from receiving multiple signals from multiple tags. As illustrated in Fig. 38, the receiver is positioned a controlled distance from Lane 2 so the signals from tags in cars traveling in Lane 2 are more than 25 feet from the receiver and, therefore, are not able reach the receiver designated for Lane 1. This does not disclose "a distance detecting portion operable to detect a distance between said interrogator and said

endpoint device" because the distance between the receiver and the tag is not detected but is merely used to limit the number of tags the receiver can receive signals from and the location of the antenna of the receiver with respect to the undesired tags in Lane 2. Neither the tag nor the receiver actually detect a distance between the other.

Further, Nysen discloses "[i]t is possible to tailor the distances in actual set up very accurately by locating the antenna at the desired distance from the tag even though the transmitter, receiver/detector and decoder are located somewhere else. . . . The antenna is the only component of the system whose location is critical" (Nysen, col. 35, lines 12-15). Therefore, the system disclosed in Nysen would not be able to detect the distance between the receiver and the tag because the receiver is not necessarily placed with the antenna. If the distance were detected in Nysen, it would be the distance between the antenna and the tag and not the distance between the interrogator and endpoint device, as required in claim 1.

Because the references do not disclose an endpoint device including a "distance detecting portion," the references also do not disclose "a band determining portion operable to determine, on the basis of said distance detected by said distance detecting portion, a frequency band of a modulating signal used to modulate a reflected signal." The Office Action admits this on pages 5-6 where it states "Nysen does not specifically discloses [sic] a band determined based on the distance detected" but alleges it would be obvious to modify Nysen so that the system determines the frequency band based on a signal's amplitude to reduce the size and cost of the transponder. The Office Action cites to Rodgers to support its conclusion that it is obvious to reduce the size and cost of devices. However, the Office Action fails to make the findings of fact required by MPEP §2143(A-G) and necessary to support the conclusion that it would be obvious, in view of trying to reduce the size and cost, to modify Nysen so that a band is determined based on the distance detected.

Regarding claim 12, Applicants assert that the references do not disclose or suggest an "interrogator including a distance detecting portion operable to detect a distance between said interrogator and said endpoint device." While Nysen discloses determining the signal strength of the received signals using a received signal indicator circuit (RSSI) (Nysen col. 38, lines 32-33), this does not disclose determining the distance between an interrogator and an endpoint device. The signal strength is used to "produce a threshold signal strength output" but is not used to determine the distance between the receiver and the tag (Nysen col. 38, line 39). While signal strength is related to the distance between a receiver and a transmitter, determining the signal strength alone, without further analyzing, does not correlate into determining the distance. As Nysen does not disclose further analyzing of the signal strength, it does not disclose an "interrogator including a distance detecting portion operable to detect a distance between said interrogator and said endpoint device."

Based on the foregoing, Applicants respectfully request withdrawal of the rejection to claims 1 and 12. Applicants also assert that claims 2-11 are patentable, at least in view of the patentability of claim 1, from which the variously depend, as well as for the additional features they recite. Therefore, Applicants respectfully request withdrawal of the rejection to claims 2-11.

Regarding claim 13, the references do not disclose or suggest a communication-condition detecting portion "operable to detect a condition of communication of the interrogator with said at least one endpoint device on the basis of at least one of a collision rate among the reflected signals transmitted from a plurality of endpoint devices, the number of occurrences of collision among the reflected signals transmitted from said plurality of endpoint devices per unit time, and an amount of error data contained in said reflected signal transmitted, from each endpoint device." The Office Action alleges that col. 18, lines 48-52 of Rodgers discloses claim 13. However, this allegation is incorrect as Rodgers at col. 18,

lines 47-49 states, "[s]ubsequent communication employing the individual identification may then proceed without collision, interference, or ambiguity in system operation." While Rodgers discloses the term "collision," it does not disclose the condition of communication detected on the basis of "at least . . . the number of occurrences of collision among the reflected signals transmitted from said plurality of endpoint devices per unit time," as recited in claim 13. Nor do the tables in Rodgers disclose the recited language of claim 13.

Further, Rodgers discloses in Table 2 under Protocol Description 3 that "[c]ollision detection may be used by the monitor to determine whether data in a particular reply slot is valid." However, this does not disclose "an available-band determining portion operable to determine an available frequency band . . . on the basis of said condition of communication detected by said communication-condition detecting portion" because the collision detected and disclosed in Table 2 of Rodgers may be used "to determine whether data in a particular reply slot is valid" but not to "determine an available frequency band."

Based on the foregoing, Applicants respectfully request withdrawal of the rejection to claim 13. Applicants also assert that claims 14, 18, 20 and 22-25 are patentable, at least in view of the patentability of claim 13, from which the variously depend, as well as for the additional features they recite. Therefore, Applicants respectfully request withdrawal of the rejection to claims 14, 18, 20 and 22-25.

Applicants also respectfully assert that claim 26 is patentable over the references because claim 26 recites the same language as recited in claim 13 and asserted above an patentable over the references. Therefore, Applicants respectfully request withdrawal of the rejection to claim 26.

Regarding claim 28, the references do not disclose or suggest "a power-source-information detecting portion operable to detect an operating state of said battery cell" where the "frequency-utilization-ratio setting portion is operable on the basis of the operating state

of said battery cell detected by said power-source-information detecting portion, to set the distribution of the frequency utilization ratio of the subcarrier signal."

Nysen does not disclose that the transponder includes a device that is "operable to detect an operating state of said battery cell" and that the "frequency-utilization-ratio setting portion is operable on the basis of the operating state of said battery cell detected by said power-source-information detecting portion, to set the distribution of the frequency utilization ratio of the subcarrier signal." Further, the disclosure of Rodgers at col. 11, line 66 through col. 13, line 23 discloses how a monitor selects frequency bands for communicating with transceivers but does not disclose the features recited in claim 28 because it does not disclose "frequency-utilization-ratio setting portion is operable on the basis of the operating state of said battery cell detected by said power-source-information detecting portion, to set the distribution of the frequency utilization ratio of the subcarrier signal."

Further, while the Office Action states that any transceiver that receives an interrogation signal receives power from the signal through the receiving antenna causing the antenna to act as a power source, the antenna acting as a power source does not disclose a battery cell. Therefore, Nysen and Rodgers do not disclose "a battery cell," "a power-source-information detecting portion operable to detect operating state of said battery cell" and "wherein said frequency-utilization-ratio setting portion is operable on the basis of the operating state of said battery cell detected by said power-source-information detecting portion, to set the distribution of the frequency utilization ratio of the subcarrier signal."

Applicants respectfully request withdrawal of the rejection to claim 28.

Applicants respectfully assert that claims 30-33 and 35 are patentable, at least in view of the patentability of claim 28, from which they variously depend, as well as for the additional features they recite. Therefore, Applicants respectfully request withdrawal of the rejection to claims 30-33 and 35.

Regarding claim 39, the references do not disclose or suggest "a battery cell," "a power-source-information detecting portion operable to detect supply-voltage information indicative of a supply voltage of said battery cell" and an "individual-frequency-utilization-ratio setting portion being operable to set the distribution of said individual frequency utilization ratio of the subcarrier signal of said each endpoint device, on the basis of . . . said supply-voltage of said battery cell detected by said power-source-information detecting portion." The applied references do not disclose these recited features for reasons paralleling the reasons applied to claim 28. Therefore, Applicants assert that claim 39 is patentable over the references and respectfully request withdrawal of the rejection.

Applicants respectfully assert that claims 40-42 are patentable, at least in view of the patentability of claim 39, from which they variously depend, as well as for the additional features they recite. Therefore, Applicants respectfully request withdrawal of the rejection to claims 40-42.

The Office Action rejects claim 34, and apparently claims 14-18 and 35, under 35 U.S.C. §103(a) as unpatentable over Nysen in view of Rodgers and MacLellan in further view of U.S. Patent Application Publication No. 2001/0020897 (Takatori). Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Nysen, Rodgers and MacLellan disclose or suggest all of the features of claim 28. Because, as discussed above, Nysen, Rodgers and MacLellan do not disclose or suggest all of the features of claim 28, the rejection is improper. Therefore, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 19-24, and apparently claims 25, 37, 38 and 40-42, under 35 U.S.C. §103(a) as unpatentable over Nysen in view of Rodgers and MacLellan in further view of U.S. Patent No. 6,792,276 (Butovitsch). Applicants consider the rejection of

claims 19 and 21 moot in view of their cancellation and respectfully traverse the rejection of claims 20 and 22-24.

This rejection is premised upon the presumption that Nysen, Rodgers and MacLellan disclose or suggest all of the features of claim 13. Because, as discussed above, Nysen, Rodgers and MacLellan do not disclose or suggest all of the features of claim 13, the rejection is improper. Therefore, Applicants respectfully request withdrawal of the rejection to claims 20 and 22-24.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-14, 18, 20, 22-26, 28, 30-35 and 39-42 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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